

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page3 line 10 reads " ...CDMA-2000 services have been fundamentally ly provided." There is an extra "ly" added which is not required.

Appropriate correction is required.

Claim Objections

1. Claim 27 is objected to because of the following informalities:... wherein even if the CDMA2000 is activated" Examiner assumes it to be "CDMA2000 modem..."

Appropriate correction is required.

2. Claim 29 is objected to because of the following informalities: ...stored in the modem-to-modem switching program." Examiner assumes it to be "... stored in memory by executing modem-to-modem switching program." Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-16, 18-20, 22-25, 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Amerga et al. (US PAT# 7,110,765 B2 with filing date 12/12/2002) herein after referenced as Amerga.

3. Regarding claim 1, Amerga discloses an apparatus and method for limiting cell reselection based on pilot power which reads on A method for switching between modems (Amerga: Fig 3), each modem being employed in an MM-MB (multimode-multiband) terminal being under a WCDMA (Amerga: column 5, lines[43-46]) idle state, when the MM-MB terminal moves from an overlay zone into a CDMA-2000 (Amerga: column 5, lines[47-48]) zone, comprising the steps of:

(a) receiving a WCDMA signal transmitted from a WCDMA system(Amerga: Fig 2: tuning receiver 220), and measuring (Amerga: Column 6, lines[12-16] Signal strength estimator) an E_c/I_o ((energy of carrier/interference of others) by using the WCDMA signal ;

(b) determining (Amerga: Column 6, lines [64-67] decision block 320, Column 7, lines[1-6] whether the E_c/I_o (Amerga: Column 8, lines[45-46], Fig: 5A & 5B, step 330) is smaller than a predetermined CDMA-2000 ON threshold TH_{ON} (Amerga: Column 8,

lines[47] Q-qual min = threshold for minimum required quality level of the cell);

(c) if the E_c/I_o is smaller than the TH_{ON} (Amerga: Column 8 , line [35] Equation Squall), driving a timer (Amerga: Column 8, lines [11-14], Fig 3: DRX cycle) to measure a time lapse, and determining (Amerga: Column 9, lines[12-17]) whether the time lapse exceeds a preset CDMA-2000 ON condition time H_d (Amerga: Column 9, lines[15] N cycles);

(d) if the time lapse exceeds the H_d , activating a CDMA-2000 modem (Amerga: Column 9, lines[12-17]) ; and (e) performing an initialization for a CDMA-2000 system to switch the MM-MB terminal into a CDMA-2000 idle state (Amerga: Fig 5A & 5B, Column 9, lines[12-17][21-57]).

1. Regarding claim 2, Amerga discloses everything in claim 1 as above along with MM-MB terminal inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) (Amerga: column 7, lines[59-65]).

2. Regarding claim 3, Amerga discloses everything in claim 1 as above along with the time lapse at step (c) (Amerga: Column 8, lines [11-14], Fig 3: DRX cycle) is a cumulative time during which the E_c/I_o is maintained smaller than the CDMA-2000 ON threshold (Amerga: Fig 5A & Column 10, lines [44-49]).

3. Regarding claim 4, Amerga discloses everything in claim 1 as above along with initialization at step (e) is performed 'through a system determination sub state (Amerga: Fig 5A: 504), a pilot channel acquisition sub state (Amerga: Fig 5A: 502) and a synchronous channel acquisition sub state (Amerga: Fig 5A: 552).

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4. Regarding claim 5, Amerga discloses everything in claim 1 as above along with after being switched (Amerga: Fig 5A & 5B, Column 9, lines[12-17][21-57]) into the CDMA-2000 idle state at step (e), the MM-MB terminal controls a WCDMA modem to be inactivated (Amerga: Column 8, lines[11-28]) .

5. Regarding claim 6, Amerga discloses a method for limiting cell reselection based on pilot power which reads on method for switching between modems, each modem employed in an MM-MB terminal being under a WCDMA traffic state when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone, comprising the steps of :

(a) receiving (Amerga: Fig 2: 220 receiver) a WCDMA signal transmitted from a WCDMA system (Amerga: column 5, lines[43-46]), and measuring an E_c/I_o (energy of carrier/interference of others) by using the WCDMA signal (Amerga: column 5, lines[43-48]);

(b) determining (Amerga: Column 6, lines [64-67] decision block 320, Column 7, lines[1-6] whether the E_c/I_o (Amerga: Column 8, lines[45-46], Fig: 5A & 5B, step 330) is smaller than a predetermined CDMA-2000 ON threshold TH_{oN} (Amerga: Column 8, lines[47] $Q_{-qual\ min} = \text{threshold for minimum required quality level of the cell}$);

(c) if the E_c/I_o is smaller than the TH_{oN} (Amerga: Column 8 , line [35] Equation Squal), , driving a timer (Amerga: Column 8, lines [11-14], Fig 3: DRX cycle) to measure a time lapse, and determining (Amerga: Column 9, lines[12-17]) whether the time lapse exceeds a preset CDMA-2000 ON condition time H_d (Amerga: Column 9, lines[15] N cycles);

(d) if the time lapse exceeds the H_d , activating a CDMA-2000 modem (Amerga: Column

9, lines[12-17]), and determining whether a WCDMA call is terminated(Amerga: Fig 5A & 5B: 550&552); and (e) if the WCDMA call is determined to be terminated, performing an initialization for a CDMA-2000 system to switch (Amerga: Fig 5A & 5B, Column 9, lines[12-17][21-57]) the MM-MB terminal into a CDMA-2000 idle state (Amerga: Column 9, lines[12-17][21-23]).

6. Regarding claim 7, Amerga discloses everything in claim 6 as above along with the MM-MB terminal inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) (Amerga: column 7, lines[59-65]).

7. Regarding claim 8, Amerga discloses everything in claim 6 as above along with the time lapse at step (c) (Amerga: Column 8, lines [11-14], Fig 3: DRX cycle) is a cumulative time during which the E_c/I_o is maintained smaller than the CDMA-2000 ON threshold (Amerga: Fig 5A & Column 10, lines [44-49]).

8. Regarding claim 9, Amerga discloses everything in claim 6 as above along with wherein, if the WCDMA call is not terminated, step (d) includes the steps of:

(d 1) determining (Amerga: Fig 3: 320) whether the E_c/I_o (Amerga: Column 8, lines[45-46], Fig: 5A & 5B, step 330) is larger than a predetermined CDMA-2000 OFF threshold THoFF (Amerga: Fig 5A & Column 10, lines [44-49]);

(d 2) if the E_c/I_o (Amerga: Column 8, lines[45-46], Fig: 5A & 5B, step 330) is larger than the THoFF, driving the timer to measure another time lapse, and determining whether said another time lapse exceeds a preset CDMA-2000 OFF condition time H_e (Amerga: Fig 5A: 508, 510 & column 9, lines [09-21]; and

(d 3) if said another time lapse exceeds the T_{He} , inactivating the CDMA-2000 modem and returning to step (a) (Amerga: Fig 5A: 508, 510 & column 9, lines [09-21].

9. Regarding claim 10, Amerga discloses everything in claim 9 as above along with if the E_c/I_o is larger than the T_{HoFF} at step (d1), the MM-MB terminal returns to step (d) to determine (Amerga: Fig 5A: 508, 510 & column 9, lines [09-21]. once more whether the WCDMA call is terminated.

10. Regarding claim 11 Amerga discloses everything in claim 9 as above along with said another time lapse at step (d2) is a cumulative time during which the E_c/I_o is maintained larger than the CDMA-2000 OFF threshold (Amerga: Fig 5A: 506 & column 9 lines [12-14]).

11. Regarding claim 12 Amerga discloses everything in claim 9 as above along with if the time lapse does not exceed the CDMA-2000 OFF condition time T_{He} , the MM-MB terminal returns to step (d) to determine once more whether the WCDMA call is terminated (Amerga: Fig 5A: 506, 508 & 554).

12. Regarding claim 13, Amerga discloses everything in claim 6 as above along with if the WCDMA call is terminated, step (e) includes the steps of:

(e1) inspecting another service channel FA (frequency assignment) of the WCDMA system (Amerga: Fig 5B: 510);

(e2) determining whether another WCDMA signal is inspected (Amerga: Fig 5B: 512, 514); and

(e3) if said another WCDMA signal is inspected, switching the MM-MB terminal into a WCDMA idle state (Amerga: Fig 5B: 514, Column 4 lines [58-60]).

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13. Regarding claim 14, Amerga discloses everything in claim 13 as above along with if said another WCDMA signal is not inspected at step (e2), the MM-MB terminal performs an initialization into the CDMA-2000 system to be switched (Amerga: Fig 5A & 5B, Column 9, lines[12-17][21-57]) into a CDMA-2000 idle state(Amerga: Fig 3: 330-370, Column 8 lines[65-68]).

14. Regarding claim 15, Amerga discloses everything in claim 14 as above along with after being switched (Amerga: Fig 5A & 5B, Column 9, lines [12-17] [21-57]) into the CDMA-2000 idle state, the MM-MB terminal controls a WCDMA modem to be inactivated. This claim is rejected for the same reasons as claim 14 along with claim 5 as method of MM-MB terminal controlling the state of the modem after being switched to a particular state will remain identical.

15. Regarding claim 16, Amerga discloses a method for limiting cell reselection based on pilot power which reads on method for switching between modems, each modem being employed in an MM-MB (multimode-multiband) terminal being under a CDMA-2000 idle state, when the MM- MB terminal moves from a CDMA-2000 zone into an overlay zone, comprising the steps of:

(a) monitoring (Amerga: Fig 3: 310, 320, 330) a paging channel periodically while maintaining the MM-MB terminal in theCDMA-2000 idle state (Amerga: Fig 5A & 5B, column 4 lines[58-61]);

(b) analyzing an overhead message received from a CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone (Amerga: Fig 5A : 504-506-508 , Fig 5B);

(c) if the MM-MB terminal is determined to be located in the overlay zone, activating a WCDMA modem (Amerga: Fig 3: 350-360); and

(d) performing an initialization process for a WCDMA system to switch (Amerga: Fig 5A & 5B, Column 9, lines[12-17][21-57]) the MM-MB terminal into a WCDMA idle state (Amerga: Fig 3: 370).

16. Regarding claim 18, Amerga discloses everything in claim 16 as above along with if the MM-MB terminal is determined to be located in the overlay zone at step (b), the MM-MB terminal returns to step (a) to monitor the paging channel again (Amerga: Fig 3: 310-330).

17. Regarding claim 19, Amerga discloses everything in claim 16 as above along with after being switched (Amerga: Fig 5A & 5B, Column 9, lines [12-17] [21-57]) into the WCDMA idle state, the MM-MB terminal renders a CDMA-2000 modem inactivated. This claim is rejected for the same reasons as claim 16 along with claim 5 as method of MM-MB terminal controlling the state of the modem after being switched to a particular state will remain identical.

18. Regarding claim 20, Amerga discloses a method for limiting cell reselection based on pilot power which reads on a method for switching between modems, each modem being employed in an MM-MB (multimode-multiband) terminal being under a CDMA-2000 traffic state, when the MM-MB terminal moves from a CDMA-2000 zone into an overlay zone, comprising the steps of:

(a) monitoring a paging channel periodically while maintaining the MM-MB terminal in the CDMA-2000 traffic state (Amerga: Fig 3: 310-330);

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(b) analyzing an overhead message received from a CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone (Amerga: Fig 5A: 504, 506, 508);

(c) if the MM-MB terminal is determined to be located in the overlay zone, determining whether a CDMA-2000 call is terminated while maintaining the MM-MB terminal in the CDMA-2000 traffic state (Amerga: Fig 3:350-360);

(d) if the CDMA-2000 call is determined to be terminated, activating a WCDMA modem; and (e) performing an initialization process for a WCDMA system to switch (Amerga: Fig 5A & 5B, Column 9, lines [12-17][21-57]) the MM-MB terminal into a WCDMA idle state (Amerga: Fig 3:370).

19. Regarding claim 22, Amerga discloses everything in claim 20 as above along with if the MM-MB terminal is determined to be located in the overlay zone at step (b), procedure returns to step (a) to monitor the paging channel again (Amerga: Fig 3: 310-330).

20. Regarding claim 23, Amerga discloses everything in claim 20 as above along with after being switched (Amerga: Fig 5A & 5B, Column 9, lines [12-17] [21-57]) into the WCDMA idle state, the MM-MB terminal renders a CDMA-2000 modem inactivated. This claim is rejected for the same reasons as claim 20 along with claim 5 as method of MM-MB terminal controlling the state of the modem after being switched to a particular state will remain identical.

21. Regarding claim 24, Amerga discloses an apparatus for limiting cell reselection based on pilot power which reads on multimode-multiband terminal capable of

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accommodating both a synchronous CDMA-2000 service and an asynchronous WCDMA service and operating in at least two frequency bands, comprising:

an RF (radio frequency) antenna (Amerga: Fig 2: 210) for transceiving a CDMA-2000 signal and/or a WCDMA signal;

an RF transceiver (Amerga: Receiver 220 in column 6 line 40) for demodulating (Amerga: Demodulator 230 in column 6 line 40) a WCDMA pilot signal received from the RF antenna and outputting the demodulated WCDMA pilot signal ((Amerga: output of demodulator 230 in column 6 line 40); a pilot signal measurement unit (Amerga: Signal strength estimator 280 in column 6 line [41]) for measuring an intensity of the demodulated WCDMA pilot signal to generate an E_c/I_o ; a WCDMA modem (Amerga: Modem described in column 6 line [32-34]) and a CDMA-2000 modem (Amerga: Modem described in column 6 line [32-34]) for processing a digital signal received from the RF transceiver (Amerga: Receiver 220 in column 6 line 40 along with transmission capability described in column 6 lines [32-34]) and performing a call processing according to protocols defined by a WCDMA standard (Amerga: column 5 lines [17-21]) and a CDMA-2000 standard (Amerga: column 5 lines [17-21] & Column 3 lines [5-15]), respectively; a flash memory (Amerga: Fig 2: 270) for storing a modem-to-modem switching program capable (Amerga: column 6 lines [48-51]) of performing a switching (Amerga: Fig 5A & 5B, Column 9, lines [12-17][21-57]) between the WCDMA modem (Amerga: Modem described in column 6 line [32-34]) and the CDMA-2000 modem (Amerga: Modem described in column 6 line [32-34]) based on an E_c/I_o ; and a controller (Amerga: Processor described in column 6 line [37-55]) for loading the

modem-to-modem switching program (Amerga: instructions described in column 6 line [48-51]) and activating the CDMA-2000 modem (Amerga: Modem described in column 6 line [32-34] & activation takes place based on result of calculation of S_{qual} & S_{rxlev} which are based on E_c/I_o along with threshold values $Q_{qualmin}$ and $Q_{rxlevmin}$) if a time lapse during which the E_c/I_o is maintained smaller than a predetermined CDMA-2000 ON threshold TH_{ON} , is greater than a preset CDMA-2000 ON condition time H_d .

22. Regarding claim 25, Amerga discloses everything in claim 24 along with the controller (Amerga: Processor described in column 6 line [37-55]) loads the modem-to-modem switching program (Amerga: column 6 lines [48-51]) at the moment the E_c/I_o starts to be smaller than the CDMA-2000 ON threshold or when it is determined that the multimode-multiband terminal enters an overlay zone by analyzing system information.

23. Regarding claim 27, Amerga discloses everything in claim 24 as above wherein, even if the CDMA-2000 is activated, the controller controls the CDMA-2000 modem to be inactivated if a time lapse during which the E_c/I_o is maintained larger than a predetermined CDMA-2000 OFF threshold TH_{OFF} is greater than a preset CDMA-2000 OFF condition time H_e (Amerga: Fig 5A & 5B, column 9 lines [06-23]).

24. Regarding claim 28, Amerga discloses everything in claim 24 as above wherein, after the WCDMA modem is activated and an initialization into a WCDMA system is completed so that the multimode-multiband terminal is switched (Amerga: Fig 5A & 5B, Column 9, lines [12-17][21-57]) into a WCDMA idle state, the controller controls the CDMA-2000 modem under operation to be inactivated. This claim is rejected for the

same reasons as claim 24 along with claim 5 as method of MM-MB terminal controlling the state of the modem after being switched to a particular state will remain identical.

25. Regarding claim 29, Amerga discloses everything in claim 24 as above wherein information upon the CDMA-2000 ON threshold THoN, the CDMA-2000 ON condition time Hd, the CDMA-2000 OFF threshold THoFF and the CDMA-2000 OFF condition time He are stored in the modem-to-modem switching program, This claim is rejected as Amerga discloses processor 260 connected to memory which stores data along with instruction for performing various procedures and methods. (Column 6 lines [47-51].

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claim 17, 21, 26 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over being unpatentable over Amerga.

28. Regarding claim 17, Amerga discloses everything in claim 16 as above along with MM-MB terminal determines (Amerga: Fig 5A & 5B) whether the MM-MB terminal is located in the overlay zone.

29. Amerga fails to disclose explicitly "by investigating a base ID of a system parameter message included in the overhead message at step (b)".

30. However it is obvious to one of ordinary skill in the art that one of the main advantages of implementing CDMA technology is the use of soft handoffs, which allows

a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

31. Regarding claim 21, Amerga discloses everything in claim 20 as above along with the MM-MB terminal determines (Amerga: Fig 5A & 5B) whether the MM-MB terminal is located in the overlay zone

32. Amerga fails to disclose explicitly “by investigating a base ID of a system parameter message included in the overhead message at step (b)”.

33. However it is obvious to one of ordinary skill in the art that one of the main advantage of implementing CDMA technology is the use of soft handoffs, which allows a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

34. Regarding claim 26, Amerga discloses everything in claim 24 as above along with after the CDMA-2000 modem is activated and an initialization into a CDMA-2000 system is completed so that the multimode-multiband terminal is switched into a CDMA-2000 idle state.

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35. Amerga fails to disclose explicitly "the controller controls the WCDMA modem under operation to be-inactivated."

36. However it is obvious to one of the ordinary skill in the art that when switching modems in a MM-MB, it is necessary to deactivate the modem which is not being used to conserve power.

37. Regarding claim 30, Amerga discloses everything in claim 24 as above, Amerga fails to disclose explicitly "further comprising a timer for detecting the time lapse and reporting the time lapse to the controller."

38. However it is obvious to one of the ordinary skill in the art that timers or counters are necessary components for general purpose processors to perform calculations for time lapse.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US 7133702 B2: Idle mode cell reacquisition and reselection.
- b. US 6363060 B1: Method and apparatus for fast WCDMA acquisition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Thursday 8:00 AM - 6:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Munjal Patel
Examiner
Art Unit 4113

Mp

/Jefferey F Harold/

Supervisory Patent Examiner, Art Unit 4113